LESSON 9.8

NAME _____ DATE _____

Challenge: Skills and Applications

For use with pages 554–560

In Exercises 1–6, use the following data.

(0, 1), (2, 2), (3, 4), (5, k)

1. Find a value of k that makes the data approximately fit a linear model.
2. Write a linear model for the data with the value of k from Exercise 1.
3. Find a value of k that makes the data approximately fit a quadratic model.
4. Write a quadratic model for the data with the value of k from Exercise 3.
5. Find a value of k that makes the data approximately fit an exponential model.
6. Write an exponential model for the data with the value of k from Exercise 5.

In Exercises 7–11, use the table which shows the exchange rates between the United States dollar and the Indian rupee from 1970 to 1995. Let x be the number of 5-year intervals after 1970.

Year	1970	1975	1980	1985	1990	1995
Rupees per dollar	7.576	8.409	7.887	12.369	17.504	32.427

7. Use the 1970 and 1975 exchange rates to write an exponential model of the data.
8. Evaluate the model from Exercise 7 for $x = 5$. How well does it fit the data?
9. Use the 1970 and 1975 exchange rates to write a quadratic model of the data in the table.
10. Evaluate the model from Exercise 9 for $x = 5$. How well does it fit the data?
11. According to the results from Exercises 8 and 10, which model seems to fit the data better?